ABSTRACT

A structure and a fabrication method for metallurgical connections between solder bumps and contact pads positioned on integrated circuits (IC) having copper interconnecting metallization protected by an overcoat. The structure comprises a portion of the copper metallization exposed by a window in the overcoat, where the exposed copper has a chemically and plasma cleaned surface. A copper layer is directly positioned on the clean copper metallization, and patterned; the resulting metal structure has an electrical (and thermal) conductivity about equal to the conductivity of pure copper. The copper layer overlaps the perimeter of the overcoat window and a copper stud is positioned on said copper layer. Finally, one of the solder bumps is bonded to the copper stud.